

WHAT IS CLAIMED IS:

1. A method of fabricating a semiconductor device, comprising:
 - (a) forming an oxide film entirely over a semiconductor substrate on which a
5 MOS transistor is fabricated;
 - (b) carrying out first thermal-annealing to said semiconductor substrate;
 - (c) removing said oxide film in an area where later mentioned
semiconductor-metal compound is to be formed;
 - (d) forming a metal film entirely over said semiconductor substrate; and
10 (e) carrying out second thermal-annealing to said semiconductor substrate
to form semiconductor-metal compound in said area.
2. The method as set forth in claim 1, further comprising (f) removing said
metal film having been not reacted with said semiconductor substrate.
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3. The method as set forth in claim 1, wherein said semiconductor substrate
is a silicon substrate, and said semiconductor-metal compound is silicide.
4. The method as set forth in claim 3, wherein said metal film is composed of
20 cobalt, tungsten or titanium.
5. The method as set forth in claim 1, wherein said oxide film is formed by
chemical vapor deposition (CVD) in the range of 300 to 500 degrees centigrade
both inclusive by the thickness of 20 to 40 nanometers both inclusive.
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6. The method as set forth in claim 1, wherein said first thermal-annealing
is carried out as spike rapid thermal annealing (RTA) by zero second in the range
of 1000 to 1100 degrees centigrade.

7. The method as set forth in claim 1, wherein said first thermal annealing is carried out also for activating impurities having been implanted into source and drain regions of said MOS transistor, and for removing defects in said source and drain regions.

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8. The method as set forth in claim 1, further comprising:
forming a trench in said semiconductor substrate; and
filling said trench with oxide to define an area in which a semiconductor device is to be fabricated.

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9. A semiconductor device comprising:
(a) a semiconductor substrate;
(b) a first MOS transistor formed on said semiconductor substrate, and including semiconductor-metal compound formed in said semiconductor substrate;

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(c) a second MOS transistor formed on said semiconductor substrate; and
(d) a film covering said second MOS transistor therewith for preventing semiconductor-metal compound from being formed in said semiconductor substrate.

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10. The semiconductor device as set forth in claim 9, wherein said semiconductor substrate is a silicon substrate, and said semiconductor-metal compound is silicide.

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11. The semiconductor device as set forth in claim 10, wherein metal in said semiconductor-metal compound is cobalt, tungsten or titanium.

12. The semiconductor device as set forth in claim 9, wherein said film is comprised of an oxide film.

13. The semiconductor device as set forth in claim 12, wherein said oxide
film is formed by chemical vapor deposition (CVD) in the range of 300 to 500
degrees centigrade both inclusive by the thickness of 20 to 40 nanometers both
5 inclusive.

14. The semiconductor device as set forth in claim 9, further comprising an
interlayer insulating film including said film as a lower film, and wherein a
wiring formed above said MOS transistor is electrically connected to said first
10 MOS transistor through a contact plug formed throughout said interlayer
insulating film, and said wiring is electrically connected to said second MOS
transistor through a contact plug formed throughout said interlayer insulating
film and said film.